

bad eggs from fresh eggs, one of the simplest is to make a hole of about the size and shape of an egg in a wooden or tin box, and hold the egg in the inside of this box against the light behind the hole. Good sound eggs are thus seen to be perfectly transparent without striations or spots, and the bubble of air within is not wider in diameter than a sixpence.

Eggs selected for preserving should be those of well-fed fowls—preferably from those of which corn is the chief diet. The eggs should be quite clean; if dirty they should be washed with a little dilute alcohol (50 per cent.), and carefully dried.

In what may be called "dry conservation," the main thing is to keep the surrounding air as clean as possible, and free from smell. The temperature should be low, but should not sink much below 32° F., otherwise freezing might cause the eggs to burst. The relative humidity should be from 60 to 80. The best plan is to stand the eggs on an egg-rack in a cool, light cellar, and preferably in an ice closet, or, on the large scale, in cold-air stores, with their points downwards, so that the air can circulate freely round them. Nothing is gained by turning the eggs at short intervals, say weekly, as recommended by some; or by packing them in salt, sawdust, powdered coal, or charcoal, wood ashes, sand, &c. Some of these things are found to "taint" the eggs; others are apt to become damp and set up the action of moulds.

It is occasionally recommended that the egg should be protected from the outer air by covering the shells with fat, vaseline, paraffin wax, collodion, &c., or that the shell should be treated with salicylic, boracic, or hydrofluosilicic acid, or even sulphuric acid, whereby the calcareous material is chemically altered and made less pervious. Immersing the egg in Condyl's fluid or a solution of potassium permanganate has also been suggested. Eggs so treated in no case were found to keep better than by cold storage in pure air.

Eggs which cannot be kept in cold stores or in an ice-chest may be preserved by Hanika's method. This consists in first putting the clean eggs into recently-boiled water at a temperature of about 110°, and then dipping them into boiling water for 10 seconds, after which they are to be immediately put into cold water. By this treatment all organisms are killed, and a hard coating is formed between the shell and the "white." The shells are finally washed with a little strong alcohol, dried, and placed in clean, dry saw-dust. Eggs so treated were found to be in perfect condition after the lapse of nine months.

Attempts are frequently made to preserve eggs by immersing them in solutions of various salts, or of substances which are known to act as antiseptics. Few of these solutions give a wholly satisfactory result; indeed, many of them, as, for example, salt, salicylic acid, borax, and glycerin, penetrate the shell, and either harden the yolk or impair the flavour. Of these liquids lime-water has been most frequently used, but by long immersion in this solution the yolk is apt to mix with the white, and the shell is rendered so fragile that it is very liable to be broken on boiling. The white of an egg which has been kept in lime-water is difficult to "whip." Much better results are obtained by the use of a 10 per cent. solution of water-glass, especially if the shells are smeared with fat or vaseline, whereby the slight taste of the alkali which the eggs are otherwise apt to acquire may be obviated.

Mr. Prall's paper, which contains the results of many hundreds of experiments and carefully made observations, arranged in tabular form and set out in detail, is a valuable contribution to the economics of an important food problem, and merits careful study by those who are interested in the subject.

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NOTES.

ON Thursday last, November 21, the Lord Mayor of Liverpool presided over an influential gathering of Welshmen from that city and from the Principality, and the following resolution was carried unanimously:—"That this meeting believes that the time has come for the early history of Wales to receive full and systematic investigation by all the means at the disposal of modern archaeological science." The Oxford professor of Celtic (Sir John Rhys) supported this at some length, pointing out that sporadic excavations were not enough in themselves, and that a systematic survey should also be made of all the antiquities of Wales and the Marches. This would entail, not only the digging over of barrows and graves, but the orientation of stone circles, cromlechs, and camps. The theodolite as well as the shovel should be called into requisition; in fact, no means should be neglected which might tend to increase the value of the investigation. Two other motions were passed, and a committee, which includes Dr. Arthur J. Evans and Prof. Haverfield among its members, was appointed for the carrying out of the work. The weight of the undertaking will fall on the University of Liverpool, which, however, is to receive assistance from the Welsh colleges. Our readers need not be reminded that Liverpool University lays special stress on the study of archaeology, and includes among its staff Prof. Bosanquet and Prof. John Garstang. We have every confidence that any work undertaken by Liverpool will be done well and thoroughly. The organising secretary is Mr. Owen Rhoscomyl, 38 Bedford Street, Liverpool.

THE Wilde medal for 1908 of the Manchester Literary and Philosophical Society has been awarded to Prof. J. Larmor, F.R.S., and will be presented to him on March 3 next. Prof. Larmor will on that date deliver the Wilde lecture on "The Physical Aspect of the Atomic Theory," and will be entertained afterwards at a dinner in his honour.

THE Physical Society announces that the third annual exhibition of electrical, optical, and other physical apparatus will be held at the Royal College of Science, South Kensington, on Friday evening, December 13, from seven to ten o'clock.

THE executive committee of the National Physical Laboratory has appointed Mr. G. W. Walker, official assistant to the professor of natural philosophy in the University of Glasgow, as superintendent of the Eskdalemuir Observatory. Mr. Guy Barr, of Christ's College, Cambridge, has been appointed to an assistantship in the metallurgical and chemical department of the National Physical Laboratory.

THE death is announced, at the age of sixty-nine, of Prof. T. Barker, professor of mathematics at Owens College, Manchester, from 1865 to 1885.

AN international exhibition of applications of electricity will be opened at Marseilles on April 19, 1908, under the patronage of the Government of the French Republic, and with the cooperation of the local authorities, municipal council, general council, Board of Trade, and other bodies. Particulars can be obtained at the office of the Commissariat-General, Boulevard Louis Salvator, 52, Marseilles, and at the Secretariat-General, 63 Boulevard Haussmann, Paris.

THE *Times* correspondent at Cape Town reports on November 23 that the Chief Justice, presiding at a meeting of the National Preservation Society, urged the need of stronger measures to preserve rare flora and fauna from

extinction. The gnu, gemsbok, mountain zebra, eland, and giraffe were all nearly extinct. He said he remembered, when a barrister on circuit, seeing great herds where there are now railway stations.

At a meeting of the Royal Society of Edinburgh, held on November 4, the following were elected honorary fellows:—(1) as *British Honorary Fellows*, Sir A. B. W. Kennedy, F.R.S., Sir E. Ray Lankester, K.C.B., F.R.S., Dr. J. A. H. Murray, Prof. C. S. Sherrington, F.R.S.; (2) as *Foreign Honorary Fellows*, Prof. Emil Fischer, Berlin; Dr. G. W. Hill, New York; Prof. F. W. G. Kohlrausch, Charlottenburg; Prof. H. F. Osborn, New York; Prof. I. P. Pavlov, St. Petersburg; Prof. G. Retzius, Stockholm; Prof. A. Righi, Bologna; Prof. L. J. Troost, Paris.

THE meeting of the second International Conference on the Sleeping Sickness, which was to have assembled at the Foreign Office on November 1, has been postponed in order that the delegates may have before them the results obtained by Prof. Koch, who has lately been carrying out an exhaustive inquiry into the subject on the spot, and is now engaged in the preparation of his report. The conference will probably not meet before the middle of February. The British delegation will consist of Lord Fitzmaurice, Sir Walter Foster, M.P., Mr. A. Walrond Clarke, Mr. H. J. Read, Sir Patrick Manson, K.C.M.G., Colonel David Bruce, C.B., F.R.S., Dr. J. Rose Bradford, F.R.S., and Sir Rubert Boyce, F.R.S.

A COMMITTEE having for its object the collection of information dealing with sleeping sickness, the stimulation of research into the cause, method of transference, and cure of the disease, and the publication from time to time of communications with reference to it, has been formed at Liverpool. The committee comprises Sir Alfred Jones (chairman), the Lord Mayor of Liverpool, Prof. Moore, Prof. Salvin-Moore, Prof. Annett, Prof. Sherrington, F.R.S., Dr. Stephens, Dr. Anton Breinl, Dr. Prout, C.M.G., Dr. A. Evans, Dr. M. Nierenstein, Mr. J. W. Garrett, and Dr. J. L. Todd. Sir Rubert Boyce, F.R.S., and Mr. A. H. Milne are the corresponding secretaries.

A DESPATCH recently received at Washington from Lieut. B. H. Camden, commanding a revenue cutter in Alaska, reports the entire disappearance of McCulloch Peak, Bogoslof Island (which rose from the sea in 1796), as the result of volcanic disturbances. The explosion which destroyed this peak has been followed by remarkable changes in the profiles of Mount Makush and neighbouring mountains, which are now softened to a general symmetry by a padding of lava dust that has almost disguised them beyond recognition. A vast quantity of this material, hundreds of feet in depth, has been deposited over the entire island.

It is announced in *Science* that the Field Museum of Natural History, Chicago, has profited by a decision of the Chicago Probate Court to the extent of \$6,000. The money was paid by the late Mr. Marshall Field to the trustees of the museum prior to the date of his will, which contained a bequest of 1,600,000. to the institution. A suit was brought by the trustees against the executors of the will to determine whether the bequest was intended to be exclusive of the amount previously donated. The judge decided the suit in favour of the museum. From the same source we learn that about four acres of ground have been set apart in the block adjoining Washington Park and the Midway Plaisance to serve as a botanic garden for the University of Chicago. The garden will

be easily accessible from the Hull Botanical Laboratory, and is to be strictly a laboratory garden, which will add greatly to the facilities for experimental work. The area, it is hoped, will be largely increased later.

THE Home Secretary has appointed a departmental committee to inquire into the subject of artificial humidity in cotton-weaving factories. The members of the committee are Sir Hamilton Freer-Smith (chairman), Mr. J. Cross, Mr. H. Higson, Mr. T. Roberts, Mr. D. J. Shackleton, M.P., and Prof. J. L. Smith. The terms of reference to the committee are to inquire and report:—(1) what temperature and humidity are necessary in each case for the manufacture of different classes of cotton fabrics; (2) at what degrees of temperature and humidity combined definite bodily discomfort arises under the conditions of the work carried on by the operatives, and what, if any, danger to health is involved by continuous work at those degrees; (3) what means of cooling humid sheds (where necessary) exist, whether combined with the means of humidifying or otherwise, which are both efficient and practicable, having regard to the conditions required for the manufacture of the several classes of goods; (4) what special arrangements, if any, are necessary in order to admit of the proper ventilation of dry weaving sheds without prejudice to the process of manufacture. The secretary to the committee is Mr. D. R. Wilson, to whom correspondence may be addressed at the Factory Department, Home Office.

ONE of the most famous establishments for the distribution of new and rare plants in this country is that of James Veitch and Sons, Ltd., Chelsea, the late managing director of which company died on November 13 at Exeter at the age of thirty-nine years. Mr. James Herbert Veitch was a son of John Gould Veitch, who died in 1870. The son was admitted to the firm whilst still young, and when he was twenty-three years of age was sent on a botanical tour to Australia, New Zealand, India, Corea, and Japan, a tour which occupied a period of two years. After his return, Mr. Veitch published in "A Traveller's Notes" some impressions he had obtained in regard to the public and private gardening and botanical establishments he had visited for the purpose of studying the cultivated plants in those countries, and obtaining information as to the possibility of introducing new species to English gardens. After the lapse of several years he was appointed managing director of the Chelsea business, and continued to discharge the responsibilities of that position until last year, when failing health compelled him to retire from business. During the time he was managing director, a special representative was dispatched to the western portion of China, approaching to Tibet, for the purpose of collecting new species of plants suitable for cultivation in English gardens. The collector, Mr. E. H. Wilson, visited China twice, the two visits occupying a period of four years, and, as a result, a large number of new species of decorative trees and shrubs, conifers, perennial herbaceous flowering plants, and some biennials were secured. One species that has already become common in gardens is the Tibetan poppy (*Meconopsis integrifolia*), and others that have been distributed include species of *Senecio*, *Vitis*, *Davidia*, *Berberis*, *Buddleia*, *Clematis*, *Corydalis*, *Cypripedium*, *Deutzia*, *Jasminum*, *Primula*, *Rubus*, and many other genera. Mr. Veitch rendered a good service to botanical and horticultural literature by publishing last year the "Hortus Veitchii," which contains short descriptions and references to publication of most of the exotic plants introduced to British

gardens by the firm of Veitch during a period of more than fifty years.

IN the introduction to a paper on parasites of Bermuda fishes, published in the Proceedings of the U.S. National Museum (No. 1560), Mr. Edwin Linton observes that fishes from the inner reefs appear to be freer from encysted parasites than those living on the outer reefs and in deep water outside. This he explains by the fact that, owing to the exceeding clearness of the water, sharks, which are the great dispersers of cestode ova, do not frequent the shoal-water. In contrast to the comparative immunity enjoyed by the shallow-water forms is the strong infestation of the deep-water species, the large "groupers" and rock-fish, living at a depth of about fourteen fathoms, harbouring numerous encysted cestodes on the viscera, more especially the walls of the stomach.

THE young stages of two fresh-water American crayfishes form the subject of an elaborate memoir by Prof. E. A. Andrews, of the Johns Hopkins University, published in the Smithsonian Contributions to Knowledge (vol. xxxv., No. 1718). Of the two genera, *Cambarus* is limited to North America east of the Rocky Mountains, while *Astacus* is common to the Pacific slope of the northern half of the American continent and the two great northern continents of the Old World. As the former is the more specialised form of the two—more especially as regards the adaptation of the young for a life of association with the female parent—it is a reasonable hypothesis that the group reached the New World by way of what is now Bering Strait, while the evolution of *Cambarus* from *Astacus*-like ancestors took place in the region of Mexico. In regard to the latter part of this theory, it might, we think, be stated that the evolution took place from *Astacus* itself, seeing that this genus is common to both hemispheres. The larval stages of the two genera are found to differ in a number of important particulars, and other results of the investigation furnish a basis for practical application to the problems of the artificial cultivation of crayfishes and the introduction of new species.

IN the October issue of the *Emu* Mr. A. H. Mattingley gives some harrowing details of the results of the visit of a party of "osprey"-plume hunters to a colony of egrets. The writer had visited the site some months previously, when all was well, but on re-visiting the place at Christmas it soon became evident that mischief had been done. "As we drew nearer, what a spectacle met our gaze—a sight that fairly made my blood boil with indignation. There, strewn on the floating water-weed, and also on adjacent logs, were at least fifty carcasses of large white and smaller plumed egrets—nearly one-third of the colony, perhaps more—the birds having been shot off their nests containing young. . . . There were fifty birds ruthlessly destroyed, besides their young (about 200) left to die of starvation! This last fact was betokened by at least seventy carcasses of nestlings . . . which had fallen from the nests into the water and been drowned; while in the trees above the remainder of the nestlings could be seen staggering in the nests." Some of these unfortunates fell from time to time into the water, others died of inanition as they sat, while yet others stretched out their necks in the vain attempt to attract the attention of others of their own kind as they flew by with food in their beaks.

ACCORDING to the report for October, the additions to the Zoological Society's menagerie during that month were 214 in number, of which 107 were acquired by presentation

and three by purchase, while ninety-two were received on deposit, ten by exchange, and two were born in the gardens. Special attention is directed by the secretary to the following:—two chinchillas (*Chinchilla lanigera*), presented by the Countess De Grey; five viscachas (*Lagostomus trichodactylus*), three presented by the Countess De Grey and two deposited; a spotted cuscus (*Phalanger maculatus*), a species new to the collection, purchased; and a naked-throated bell-bird (*Chasmorhynchus nudicollis*), a ground-hornbill (*Bucorvus abyssinicus*), and two Arizona poisonous lizards (*Heloderma suspectum*), deposited.

THE University of California continues its useful series of publications on the religion, sociology, and languages of the Indian population of the State. The most valuable of those recently issued is a monograph, by Mr. A. L. Kroeber, on the religion of the Indians of California. This is a form of Animism; but its distinguishing characteristic is the strong belief in Shamanism, generally in connection with disease and death. Dancing, always accompanied by singing, is a conspicuous element in all tribal ceremonials. In one tribe the dance is performed by the women, who stand up to their hips in water. The author gives full details of the mode in which the Shaman or medicine-man is initiated. The profession, though lucrative, can hardly be said to be desirable. Among some tribes, if he loses several patients in succession, he is held responsible by the relatives; in another, murder seems to be his normal end; in a third, if he fails to cure, he is obliged to return his fee. The author also gives a most interesting account of the rites of initiation for girls and boys, of the domestic and tribal celebrations, and of the mythology and popular beliefs. In a second paper he furnishes an elaborate analysis of the Washo language of east central California and Nevada. It is satisfactory to learn that the University has acquired the large MS. collections on the North American Indians made during a long service among them by the late distinguished scholar, Dr. Washington Matthews. These are now being published, the first instalment being a collection of Navaho myths, prayers, and songs, with the text and a translation.

THE importance of algal growth in the colonisation of new ground is well recognised, but there are few records of detailed examination, so that the paper contributed by Dr. F. E. Fritsch to the *Geographical Journal* (November), embodying primarily the results of observation in the tropical climate of Ceylon, furnishes valuable data for reference and for extended inquiry. The blue-green algae, by reason of their colour and sheaths, are peculiarly protected against insolation and desiccation, and therefore comprise the bulk of aerial algal colonies in Ceylon. Dr. Fritsch distinguishes four methods of growth, which he calls *adhesive*, *tangled*, *tufted*, and *stratified*. The adhesive is the earliest and simplest type; tangled and tufted colonies, being better adapted as regards respiration and water absorption, proceed from the adhesive; the stratified form is a special modification determined by light or possibly by moisture conditions.

THROUGHOUT Germany the moors form an important feature of the vegetation, and on this account have engaged the attention of botanists, who have investigated their origin and formation. With the view of providing ocular demonstration of their development, Dr. C. A. Weber has designed two attractive coloured plates indicating in section elevation the different strata that have formed successive stages in the production of a moor. The diagram of the low-moor pictures the various zones from a mineral substratum

through rush-turf to coniferous forest. The plate illustrating the high-moor decked with cotton grass shows additional layers, notably sphagnum-zones superposed. The plates, measuring 110 cm. by 150 cm., are published by Gebrüder Borntraeger at the price of twenty shillings, or mounted on linen thirty-two shillings, a pair. The same firm is also publishing a set of plates illustrating pharmaceutical products at a subscription price of twenty-five shillings for five plates. A specimen plate of *Lignum Guaiacum* bears figures of wood and cortex as seen in different sections, also of the broken elements. The plates have been drawn by Mr. J. Pohl under the direction of Dr. E. Gilg.

THE latest Bulletin (No. 26) issued by the Geological Survey of Western Australia contains a series of miscellaneous reports which in themselves are not of sufficient length to warrant issue as separate publications. The volume covers eighty-seven pages, and contains fourteen illustrations and six maps. Mr. A. Gibb Maitland contributes papers on the occurrence of artesian water in the Northampton and Geraldine district, on the geology of Princess Royal Harbour, with special reference to the occurrence of petroleum, and on recent advances in the knowledge of the geology of Western Australia. Mr. H. P. Woodward gives an account of the geology of the country between the Ashburton and Minilya rivers. Mr. W. D. Campbell describes the phosphatic deposits near Dandaraga. The discovery is one of great value to the State. The deposit occurs in a series of beds which have been followed for twenty-two miles, one bed of fossil bone and coprolite rock, 7 feet in thickness, containing 15.32 per cent. to 39.34 per cent. of phosphoric acid. Mr. W. D. Campbell also contributes some notes on a geological map of the Greenough River district. Mr. E. S. Simpson describes a small meteorite, a siderite of the octahedrite type weighing 120.2 grams, from the Nuleri district of Western Australia. He also contributes a valuable report on the prevention of the external corrosion of goldfields' water-supply pipes. The Survey is to be congratulated upon the issue of these reports in a collective form, as they cannot fail to help to make known the varied mineral resources of Western Australia.

A THOROUGH change has occurred in the type of the weather during the past week, and more wintry conditions than at any time this season have been experienced. Night frosts have occurred in many parts of the country, and heavy snow has fallen over the northern portion of England. Cyclonic disturbances continue to arrive from the Atlantic with considerable frequency, and at times these are accompanied by winds of gale force. On Monday a whirlwind was experienced in the neighbourhood of Deal, and some farm buildings sustained considerable damage. The autumn has, on the whole, been exceptionally mild, the day and night temperatures being generally at least 5° above the average.

WE have received the fourteenth annual report of meteorology in Mysore, being the results of observations at Bangalore, Mysore, Hassan, and Chitaldrug for 1906. To the present report the daily means for the twelve years 1893-1904 have been added for each of those important stations. The director (Mr. J. Cook) states that, in accordance with the recent action of the Government of India, which has reduced the majority of its second-class observatories to third-class ones, the last two of the above-mentioned stations will hereafter be of the third class. For this reason the twelve-year means now published for

those places will be valuable as climatic standards of reference.

AN important article by Captain Tancredi in the *Rivista Coloniale* on the climate of the Italian colony of Eritrea, from observations at fourteen stations, is summarised in the Quarterly Journal of the Royal Meteorological Society for October. The observations at Massaua extend over ten years, and these, so far as regards temperature, rainfall, and humidity, have also been discussed with others extending (with small interruptions) over eighteen years (1885-1902) by Drs. Eredia and Memmo in the Bulletin of the Italian Geographical Society. The lowest of the mean monthly minima, 72°·3, occurs in January, and the mean maximum, 103°·1, in July; the mean yearly temperature is 86°·0. The year may be divided into two periods; from May to October the monthly means are above, and from November to April below, the mean value. The average annual rainfall is small, being only 7.19 inches, of which 6.04 inches fall between October and March; none falls in June. Malaria depends especially upon the altitude; places above 6000 feet are practically free from it, while in the low-lying regions it is endemic, and assumes an epidemic character in some months, apparently depending upon the régime of the rainfall in the locality.

THE Smithsonian Institution has published ("Miscellaneous Collections," xlix.) a memorial of the late Prof. S. P. Langley, accompanied by a bibliography of his published writings. It contains addresses by Dr. Andrew D. White, dealing with biographical details; by Prof. E. C. Pickering, dealing with Prof. Langley's contributions to astronomy and astrophysics; and by Mr. Octave Chanute, dealing with his contributions to aerodynamics. The last-named address is of considerable interest in consequence of the conflicting statements which appeared in the Press at the time in reference to the alleged success or failure of Langley's experiments on aeroplane flight. The facts of the case as chronicled by Mr. Chanute will now become a matter of history.

IN the Proceedings of the Edinburgh Mathematical Society (xxv.), Mr. R. F. Muirhead directs attention to a simple method of calculating first and second moments of certain elementary figures. By "second moments" are meant the same as "moments of inertia," the term being preferred, as it does not imply that we are concerned with masses. The method in question, or one very similar to it, was known at Cambridge many years ago, but does not seem hitherto to have been much discussed in print. As applied to the triangle, this method consists essentially in dividing a triangle into four smaller triangles by joining the middle points of the sides, and applying Huyghens's principle of parallel axes to obtain a relation between the moments of the original triangle and the four smaller ones.

AN interesting account of the Amalgamated Radio-Telegraph Company's new Transatlantic wireless station at Knockroe appears in the *Electrician* of November 15. The station is nearly completed, and when finished an Atlantic shipping service will be started, while as soon as the Canadian station is opened a Transatlantic service will be commenced. Three masts, 350 feet high, carry the insulated ends of some 300 wires, which descend in a cone to nine short masts, 70 feet high, erected in a circle about the taller ones. The Poulsen system of wireless telegraphy by undamped waves is employed, and it will be interesting to compare the Marconi and the Poulsen systems in a Transatlantic service. Possibly in this station

a higher voltage than that usually employed in the Poulsen system—400 to 500 volts—may be found necessary, but otherwise the apparatus installed does not differ very considerably from that at other stations. A great many improvements have been made in the different parts of the apparatus since Mr. Poulsen gave a demonstration of his system at the Queen's Hall, a full account of which appeared in these columns at the time (*NATURE*, vol. lxxv., pp. 105, 106), and the transmitter at Knockroe station has been designed to transmit waves 3000 to 5000 metres long, and capable of giving the desired wave-length without any variation. The company has also a new thermo-electric detector with which it expects to print Transatlantic messages, and in consequence to be independent of telephonic reception. The Poulsen-Pedersen "ticker" method of reception also has been adapted to working a relay and a Morse inker. This "ticker" receiver has been greatly improved upon, and the latest form recently established a long-distance record, receiving a ship signal at a distance of 2060 miles.

THE theory of the formation of the rainbow has been worked out more completely than hitherto by Prof. T. Tanakadate in the August number of the Proceedings of the Tokyo Mathematico-Physical Society. Taking account of the loss of light on reflection and refraction, and of the effect of polarisation, the author follows Airy's treatment, and obtains an expression for the intensity of light of each of the four bows due to drops of a particular size, in a form suitable for numerical calculation.

IN the *Physical Review* for October Prof. W. S. Franklin and Mr. L. A. Freudenberger describe an arrangement they have found very satisfactory for measuring the resistance of electrolytes without the use of electrodes. The electrolyte is placed in an annular glass tank which encircles the iron of a small transformer the primary of which forms one arm of a resistance bridge. In the corresponding arm of the bridge a similar transformer is placed, and the resistance of its secondary adjusted until the bridge is balanced, when an alternating current is supplied to it. The apparatus is so simple and the results are so good that electrodeless methods should replace some of those at present in use.

THE *Physikalische Zeitschrift* for October 24 contains abstracts of many of the papers read at the Versammlung deutscher Naturforscher und Aerzte in Dresden in September. The meeting, owing largely to the exertions of Prof. Hallwachs, was very successful. Of many papers of great interest, two may be mentioned. Drs. E. Gehrcke and O. Reichenheim have measured the change of wave-length of the light of the anode rays when they are seen end on, and have shown that when the anode is of sodium, lithium, or strontium the rays consist of molecules of these metals thrown off from the anode. Drs. Scheel and Heuse have measured the expansion of platinum between -183° C. and $+16^{\circ}$ C., and find as the mean result of three determinations by the two-microscope method and by Fizeau's method 1602×10^{-4} cm. per centimetre.

ARRANGEMENTS are being made by which the Proceedings of the London Mathematical Society may be subscribed for by the public at a uniform price per volume, the volumes to be supplied either in parts, as issued, or in volumes at the option of the subscriber. The arrangement will begin to take effect with the next volume, the first part of which will probably be published early in January, 1908.

THE *Anglo-German Courier* of November 23, published by the *African World*, is entirely devoted to an illustrated description in German and English of the recent visit of

the German Emperor and Empress to London. This is the final number of that periodical, which was started to promote friendly feelings between the people of Great Britain and Germany—a mission that may now be regarded as accomplished.

Two well-illustrated and conveniently arranged catalogues have been received from Messrs. Casella and Co. One deals with self-recording instruments for scientific, engineering, and industrial purposes, and the other provides descriptions of anemometers, air meters, and wind-direction instruments. The catalogues deserve the attention of meteorologists, teachers of geography, and other observers.

A SECOND English edition, which has been re-written, of Prof. A. F. Holleman's "Text-book of Organic Chemistry," has been published in this country by Messrs. Chapman and Hall, Ltd., and by Messrs. John Wiley and Sons in New York. The first English edition was reviewed in *NATURE* of June 18, 1903 (vol. lxxviii., p. 149), and it will suffice to say that the present volume is, like the former, the translation of Dr. A. Jamieson Walker, and is from the third Dutch edition. The translator has had the cooperation of the author and the assistance of Dr. Owen E. Mott.

MESSRS. J. M. DENT AND CO. have published the first number of the *New Quarterly*, a review of science and literature, edited by Mr. Desmond MacCarthy. The price of each issue is 2s. 6d. net. If science is to receive the same amount of attention in subsequent numbers, the review should become popular in the scientific world. Of the nine articles included in the present issue, four deal with various departments of scientific work. Lord Rayleigh, P.R.S., discusses the question, "How do we perceive the direction of sound?" The Hon. Bertrand Russell writes on the study of mathematics; the Hon. R. J. Strutt, F.R.S., deals with the question, Can we detect our drift through space? and Mr. G. A. Paley contributes an article on biology and politics.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN DECEMBER:—

- Dec. 1. 2h. Mercury at greatest western elongation ($20^{\circ} 20'$).
 3. 18h. 30m. Mercury 4° W. from the Moon.
 7. 11h. 42m. Minimum of Algol (β Persei).
 10–13. Epoch of the Geminid meteoric shower.
 10. 17h. Mars in conjunction with Moon. (Mars $3^{\circ} 25'$ S.).
 10. 8h. 31m. Minimum of Algol (β Persei).
 11. 22h. Venus in conjunction with Uranus (Venus $0^{\circ} 59'$ S.).
 12. 3h. 35m. to 4h. 28m. Moon occults 30 Piscium (mag. 4.7).
 „ 5h. 28m. to 6h. 42m. Moon occults 33 Piscium (mag. 4.6).
 13. 5h. 20m. Minimum of Algol (β Persei).
 „ 3h. 54m. to 4h. 44m. Moon occults 20 Ceti (mag. 4.9).
 15. 2h. 55m. to 3h. 47m. Moon occults ξ^2 Ceti (mag. 4.3).
 17. 12h. 53m. to 13h. 18m. Moon occults δ^1 Tauri (mag. 3.9).
 „ 14h. 9m. to 15h. 18m. Moon occults δ^3 Tauri (mag. 4.2).
 20. 22h. Vesta in conjunction with the Moon. (Vesta $0^{\circ} 59'$ S.).
 22. 12h. Sun enters Capricornus. Winter commences.
 23. 2h. 6m. Jupiter in conjunction with Moon (Jupiter $1^{\circ} 53'$ S.).
 30. 10h. 14m. Minimum of Algol (β Persei).
 31. 3h. Mars in conjunction with Saturn. (Mars $1^{\circ} 50'$ N.).